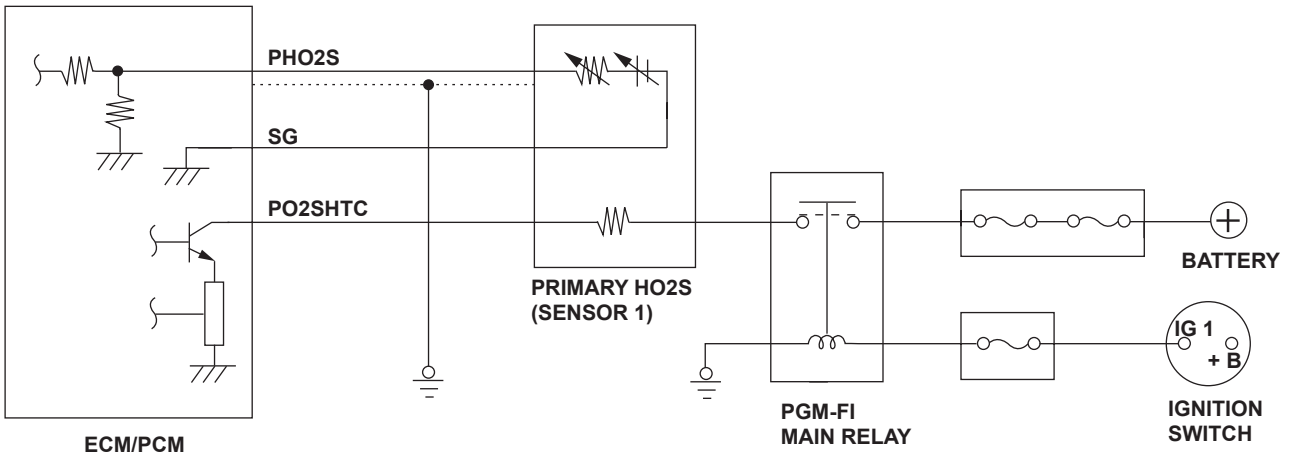
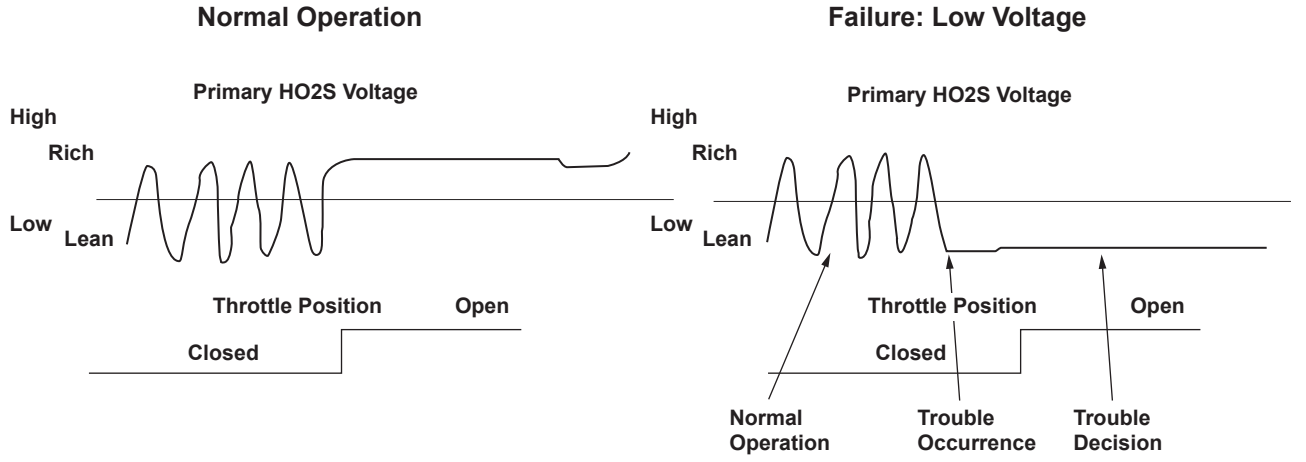
DTC P0131: Primary Heated Oxygen Sensor (Primary HO2S) (Sensor 1) Circuit Low Voltage



P0131-9601



P0131-9671

General Description

The primary heated oxygen sensor (HO2S) (Sensor 1) is installed in the exhaust system. It detects the oxygen content in exhaust gas and transmits voltage to the engine control module (ECM)/powertrain control module (PCM).
The ECM/PCM monitors the primary HO2S voltage value after the zirconia element reaches its operating temperature, and it controls the amount of injected fuel (air/fuel ratio feedback control) so that the air/fuel ratio is close to the stoichiometric air/fuel ratio.
If the primary HO2S voltage is low, the air/fuel ratio is lean, so the ECM/PCM uses A/F feedback control to issue a Rich command. If the primary HO2S voltage is high, the air/fuel ratio is rich, so the ECM/PCM uses A/F feedback control to issue a Lean command.
If the primary HO2S (Sensor 1) output voltage stays lower than a predetermined value (lean side) during enrichment with the throttle wide open, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type

Execution	Under the Enable Conditions
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL ON

Enable Conditions

Condition	Minimum	Maximum
Elapsed time after starting the engine	60 seconds	—
Engine coolant temperature	140ºF (60ºC)	—
Engine speed	1,400 rpm	—
Fuel feedback	Wide open throttle	
No active DTCs	ECM/PCM, Primary HO2S Heater, MAP, CKP, ECT, TP, CYP, VTEC System, Fuel System, Misfire	

Malfunction Threshold

The primary HO2S output voltage is 0.05 V or less for at least 5 seconds.

Driving Pattern

1. Start the engine. Hold the engine at 3,000 rpm with no load (in park or neutral) until the radiator fan comes on.
2. Then, drive the vehicle with the throttle wide open for at least 5 seconds.

- If you have difficulty duplicating the DTC, retest after turning off electrical components such as the audio system and A/C, and try a different gear position.
- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the ECM/PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.
The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.